Lossie Spaceport: The distance between dreams and reality

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AS we approach the 50th anniversary of the first human to journey beyond our fragile atmosphere, we find that the UK space industry is more fashionable than ever.

This is not, as it has been historically, because of the glamour and national prestige, although this helps, but because of its value to the economy.

The success and prosperity of the UK's and Scotland's space industry is probably one of our best kept national secrets. But the business of space is no "and finally" story.
The space industry has matured significantly since Soviet cosmonaut Yuri Gagarin's short flight 50 years ago. Throughout the recent recession it continued to show growth rates as fast as the Chinese economy. Today the UK industry is worth over £7.5 billion annually, and is growing per annum at 10% in value.

It was therefore little surprise to the industry that the recent UK Budget contained "good news stories" for the sector. Within the context of the current financial settlement the zero-cost plan to revisit the Outer Space Act, the legal basis for the regulation of UK activities in outer space, is a logical move and has rightly been strongly welcomed in Moray, with the threatened RAF Lossiemouth base seen as a potential space tourism hub. This is exactly the type of pioneering, privately funded innovation which the UK excels at in the space sector.

It would seem the UK space industry is set strong for the future, so why am I increasingly concerned the more I see?

In the late 19th and early 20th century, pioneers like Tsiolkovsky, von Braun and Godard performed pioneering research that became pioneering firsts such as the V2 rocket, Sputnik-1 and human spaceflight. As we sustained mastery of space technology, developments such as Telstar-1, satellite television and the Hubble Space Telescope appeared.

Today, human technology has visited every planet in the solar system, and space technology is so embedded in our society that it's invisible to most people. Borrowing from diffusion of innovations theory, robotic space technology is approaching the top of the s-curve – the big money has been made and market shares secured.

Consider in this context another "good news story" from the Budget, £10 million of investment in commercialisation of new space technologies. But is this sufficient funding to be more than corporate welfare? For the UK space sector to keep growing at its current rate in the medium to far term it seems obvious we must trigger a new s-curve rather than attempting to sustain the current one. We must embrace Space 2.0 rather than clinging to the diminishing returns of Space 1.0.

Like Web 1.0, Space 1.0 created the in-orbit infrastructure. Space 2.0 will build on this infrastructure, with spacecraft becoming more inter-dependent and specialised. In effect, the market of the terrestrial public utilities will expand into orbit.

The commercial exploitation of Space 2.0 is likely to be 30 to 50 years away and regrettably this is too far for a UK government of any ilk to comprehend.

Instead short-term commercialisation is the order of the day, failing to grasp that innovation is a pipeline. And in space, it's a really, really long pipeline. By clinging to the ever diminishing returns of Space 1.0 at the ever increasing expense of vital horizon scanning research we risk the long-term future of this now key national industry.

And what of a Moray Spaceport and Scotland's place in Space 2.0? The true commercial value of the plan to revisit the Outer Space Act will most likely not be space tourism from Lossie, although this may have its place. Rather, it will be in the resultant ready access to orbit from Lossie for low-mass robotic spacecraft, a field in which Scotland, and the UK, is already a world leader.

The true nature of Space 2.0 of course cannot be currently known. But, if we continue to focus on short-term commercial gain at the expense of horizon scanning, fundamental research, we risk playing catch-up and fighting for the scraps from somebody else's big win.

Space 1.0 got us into orbit and began the process of integrating orbit into our everyday life. Space 2.0 will be seamless from ground to orbit, and the pioneering engineering which will enable it is already happening in Scotland at, for example, the University of Strathclyde, Clyde Space and beyond. But this world leading position can only be sustained and exploited with a renewed Government realisation of the value of the complete innovation pipeline.

Space is the 8th continent. The question is, do we want to lead the exploration and exploitation that will happen in the next 50 years, or shall we simply form an orderly queue beyond more ambitious nations?

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